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ABSTRACT

Noting that handwriting is a subskill that often becomes an instructional end rather than a means to enhance written communication, this paper examines research on handwriting and its implications for instruction. Following an introduction on the current status of handwriting instruction, the paper summarizes research on handwriting legibility, fluency, and self-evaluation. Then the paper touches briefly on additional concerns that have appeared in the research, including the manuscript versus cursive script debate, and the writing implements--pens, paper, grip, and position. Implications for instruction are then discussed, in the areas of readiness, handwriting styles, instructional strategies, left-handed writers, remediation, and applications of technology. The paper concludes by noting that teachers need more training in handwriting instruction and that teacher attitude has a significant impact on developing a positive disposition toward legible, fluent handwriting. An annotated bibliography directed to the classroom teacher is included. (HTH)

English Language Arts
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Number 2

Handwriting

INTRODUCTION

Handwriting and spelling share the distinction in the school curriculum of being subskills which can become ends for instruction rather than means to enhance written communication. A society which types public documents and puts word processors in the hands of office workers as soon as possible does not show evidence of great regard for the beautifully penned script which was once the mark of the educated person. The preference for electronically processed print rather than the penned hand has influenced handwriting instruction in the schools. However, handwriting remains a primary tool of communicating and recording ideas and information and so will continue to be both an issue of controversy and a necessary skill. Renewed interest in the subject can make a difference in instruction and student outcomes.

There is little argument about the need to teach handwriting in our schools, and by some it is considered to be the most poorly taught element of the elementary curriculum. Teachers in the last 25 years or so have little or no formal training in the subject. Handwriting instruction is unpopular with teachers and with students and is frequently regarded as eating up valuable instructional time. (Graham and Miller, 1980)

SUMMARY OF RESEARCH

Research tends to focus on three primary considerations which, not surprisingly, are also the crucial elements in handwriting instruction.

Legibility

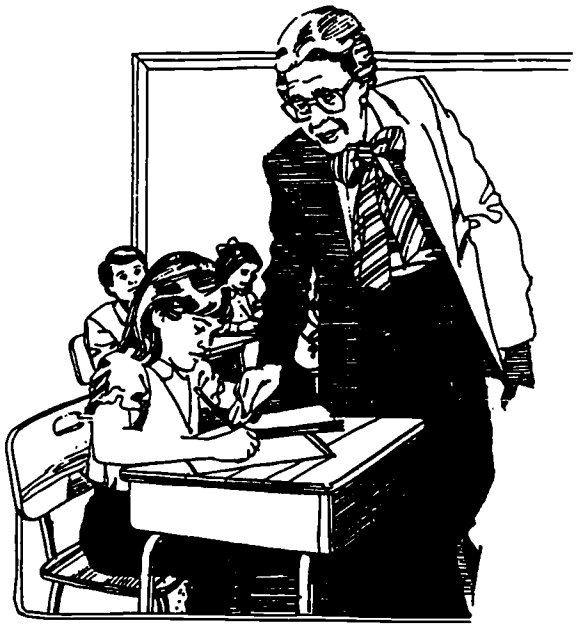
The major area of research and of concern to educators, to parents and community members, and to students themselves, is legibility. A number of different factors are examined in the various research studies.

A summary of current practices indicates that instruction in handwriting is fairly uniform throughout the United States and Canada in several aspects. (Peck, Askov, and Fairchild, 1980)

- Instruction in manuscript generally begins in the first grade, although 34 percent of rural and 15 percent of urban schools begin some instruction in kindergarten.
- Transition to cursive usually occurs in third grade.

"Children learn better from an active model -- that is, they learn faster when they can see the modeling of the process than they do if they merely see still pictures of the process."

- Handwriting lessons are frequently presented to the entire class and take eleven to twenty minutes per day, with first grade students receiving the largest shares of instructional time.
- Approximately 30 percent of classes use workbooks for copying practice with chalkboards, overhead projectors, and duplicated practice sheets used in the remaining classes.
- Grades are given in handwriting in 70 percent of the schools. Evaluations tend to be based on teacher observations rather than on an established evaluative scale.
- Teachers prefer three-guideline ruled paper and pencils for practice. Some studies show no differences in legibility on different widths of lines; others show improved legibility for first graders using widelined paper and neater writing with greater ease for third graders using lined vs. unlined paper. Children in one study indicated a preference for regular-sized pencils, ballpoint pens, or felt-tipped pens as writing implements.



- Teachers regard handwriting as "close" or "very close" in relationship to the other language arts.
- Left-handed students are usually given some special instruction.

Legible handwriting is characterized by well-proportioned and uniformly arranged letters and words. (Graham and Miller, 1980) A number of studies indicate that practice is the most important factor. (Peck, Askov, and Fairchild, 1980) Another significant aspect in legibility is the amount of emphasis placed on good handwriting by the teacher. When teachers emphasize the importance of legible handwriting, students improve the quality of their work. (Milone and Wasylyk, 1981) Children in schools in which handwriting is stressed are more apt to have high quality skills. (Currie, 1981)

However, children need to understand from the beginning that the degree of neatness required for a specific piece of writing is related to the intended audience and purpose. Adults often place an arbitrary standard of neatness on children's writing. This emphasis on neatness for all writing tasks often confuses the child into believing that neatness and legibility are synonymous. (Koenke, 1986)

Fluency

Another area which has an influence on the individual's ability to use handwriting skills effectively is fluency, or the rate at which one is able to produce letters and words. Speed is an

essential element in note-taking, drafting original material, and completing certain timed exercises. (Graham and Miller, 1981)

Teachers seldom check, and the commercial materials rarely mention, the area of fluency. Research brings out concern for rate, but it appears that controlled testing creates a new series of problems. Should the child be tested when copying something someone else wrote? If so, is this a speed test for writing or is it a speed test for reading? Should the child be tested when creating original writing? If so, is this a test of writing speed or of composing speed? It is important to differentiate between handwriting speed and composing speed. (Graves, 1983) There have been numerous sets of acceptable speeds of writing established, but each of these is subject to the conditions under which the writing sample was taken.

For the present, it is sufficient to say that speed is an important consideration, and teachers need to be more aware of the difficulties imposed on a child who is unable to vary it and to write with ease. The emphasis on speed is directed toward the goal that children be able to compose in thought units rather than word by word, or worse yet, letter by letter. (Graves, 1983) They must be able to get their ideas down without having to struggle with either fast, but illegible writing or laboriously slow, but copybook-perfect writing. Interestingly enough, rate seems to be a more difficult problem for many children than the actual formation of the letters. (Phelps, 1985)

Occasional speed drills will help students to increase fluency and will help the teacher in diagnosing areas of deficiency. This is especially important in the formal handwriting program which usually ends with the elementary grades. If students have not developed sufficient speed by the time they enter secondary school, there is rarely a planned program to assist students with handwriting problems in the upper grades. (Sassoon, 1983)

Self-Evaluation

It is stressed throughout the literature that an important component of any handwriting program is the self-evaluation of letter formation. Self-evaluation helps place both the responsibility for change and the decision about whether change is necessary on the student. Children interpret

learning to print according to their own framework. They are not making errors; they are interpreting the information in some special, but to them logical, manner. (Brugelmann, 1986)

Several studies show that students have difficulty judging the quality of their work and that poor handwriters are less successful than good handwriters at arriving at an accurate rating. (Graham and Miller, 1980) Self-evaluation instruments are provided with some publishers' materials. Teachers have also found useful a variety of rating scales or the use of transparent overlays in assisting students to assess their own handwriting. (Graham and Miller, 1980; Milone and Wasylyk, 1981)

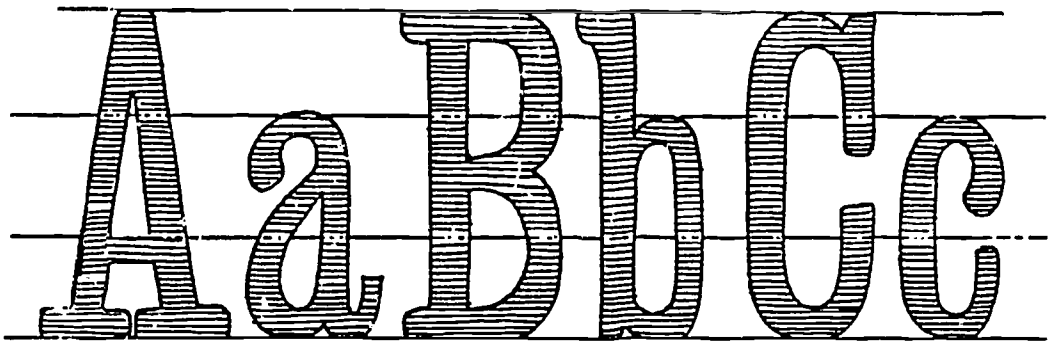
Regardless of the problems inherent in self-evaluation, it appears to be an important aspect for improvement of handwriting. (Sassoon, 1983) The self-evaluation process helps to develop students' confidence in their handwriting ability. (Brown, 1970) However, despite the support in the research for self-evaluation, current practice seems to be almost entirely teacher evaluation. (Peck, Askov, and Fairchild, 1980)

ADDITIONAL CONCEPTS

Several additional elements of handwriting appear frequently enough in the research to warrent mention.

Manuscript Versus Cursive Script

The use of two handwriting systems, manuscript and cursive, in our society occasions much debate despite the fact that both systems have been in place in the United States and Canada for almost 90 years. There is a great deal of support for this two-alphabet system among parents and teachers. (Sloan, 1977)



There are proponents for both styles of writing. Some evidence seems to indicate that manuscript may be more legible than cursive script. (Graham and Miller, 1980) And there is no clear-cut evidence that cursive outranks manuscript in the speed with which it can be produced, an argument frequently put forth in its favor. (Peck, Askov, and Fairchild, 1980 and Koenke, 1986). But there is support for current practice in teaching both styles. However, there should be an emphasis on maintaining manuscript style after cursive is introduced. (Peck, Askov, and Fairchild, 1980)

There is little formal evidence to support a particular grade level as the ideal time for students to make the transition from manuscript to cursive handwriting. In fact, individual readiness may be the most important factor of all. (Graham and Miller, 1980)

Pens, Paper, Grip, and Position

Regardless of the handwriting method selected, there are still some common elements in teaching handwriting which must be considered. These are the physical properties of writing implements — grip, writing surface, and paper position. It appears that lined paper is especially important to children when they are first beginning to learn to write. (Koenke, 1986) However, unlined paper appears to be appropriate for early experimentation with writing.

A variety of research studies have investigated the surfaces beginning writers use. Studies showed that while using lined paper increased legibility over unlined paper, there was no difference between wide-ruled and narrow-ruled paper in terms of legibility. However, an additional study focusing on first graders found more

accurate letter strokes using wide-lined paper. (Peck, Askov, and Fairchild, 1980)

The tools with which children write seem to be more controlled by myth than by research. Although the practice of using beginning pencils which have exceedingly soft lead, are fat, and have no erasers continues, there does not seem to be any good reason for this practice. (Koenke, 1986) Children in this day and age begin writing on things at home at a tender age, and their beginning squiggles are usually made with a ballpoint pen because it is the most common writing implement in the home. Some research indicates that the use of the beginner's pencil should be terminated in the lower grades. (Peck, Askov, and Fairchild, 1982)

It appears that with the variety of writing tools available, children should be encouraged to experiment with various mediums. That is not to suggest that crayons or felt-tip pens should replace the pencil as the common instrument for classroom work. The point is that children love

the variety and they should be encouraged to experiment. Anything which adds to the interest and enthusiasm of children as they learn this new skill should be encouraged. (Klein, 1985; Brown, 1970)

Paper position and correct grip also have an important effect on legibility and writing comfort. (Milone and Wasylyk, 1981) It is extremely important that children be taught proper placement of the paper as they write. Paper placement is not just an arbitrary choice of etiquette; it actually involves the best use of the large and small muscles. (Graves, 1983) Some researchers have found that alternate pencil grips may relieve pressure and fatigue for some writers without impairing legibility or speed. (Graham and Miller, 1980) Similarly, it is important to stress correct posture while writing to increase legibility and decrease fatigue. The student who writes with his head lying on the desk has a very distorted view of what he is producing. Leaning too heavily on the desk or sitting incorrectly in the chair make it difficult to coordinate muscles correctly for writing. (Milone and Wasylyk, 1981)

IMPLICATIONS FOR INSTRUCTION

A great deal of the current research in handwriting points to some specific recommended practices for effective instruction.

Readiness

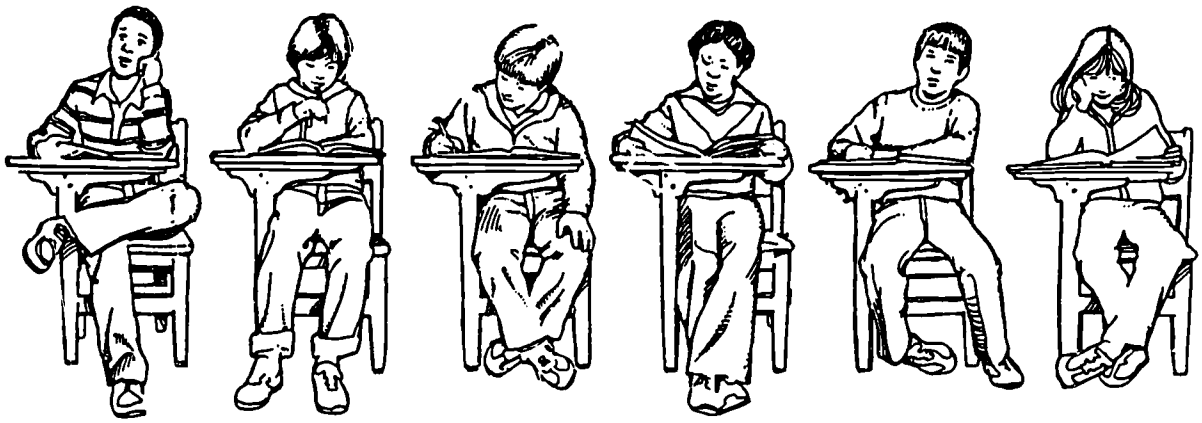
Children reach a stage of readiness to learn handwriting at different times, indicating a need

for some individualized readiness or introductory activities. This is not to imply that children need to master handwriting before they are allowed to compose. They can use symbols or can dictate their information to adults. (Klein, 1985; Graves, 1983)

Some indicators of readiness are an interest in learning to write, adequate muscular coordination, visual discrimination skills, left-to-right progression understanding, writing hand preference, and the ability to draw circles and diagonal and horizontal lines. (Graham and Miller, 1980) Handwriting instruction should include activities which are less restrictive than mere tracing and which provide children with the practice of holding a visual image in their minds while teaching them to make the movements involved in the basic strokes of letter-making. A variety of drawing, painting, clay modeling, and other activities requiring small muscle coordination stimulate interest in and readiness for handwriting.

This often overlooked readiness issue may be the major reason why some children find learning handwriting so difficult. Once again, the importance of training for teachers working with young children becomes a focus. Forcing children to write before they are physically ready may cause long-term permanent problems in their handwriting.

As with all activities in which beginning writers are involved, the nature of the activities must be carefully controlled. There are many interesting ways to allow children to practice skills. They need not be involved in a series of meaningless, boring squiggles. (Currie, 1981) Children can be encouraged to make a series of drawings with a variety of writing implements to learn to control their fine motor skills. They need to feel some pride in their work and an opportunity to practice these new skills. Skipping the readiness step and insisting that all children learn to write their names by a certain date may also have some long-lasting negative effects on the handwriting. (Sassoon, 1983)



Styles of Handwriting

One of the most troublesome areas of penmanship for teachers and others who are trying to make intelligent decisions about what "kind" of penmanship to teach is that it really does not seem to matter which style is taught. Although various publishers will claim that their approach is superior, the research simply does not support those claims.

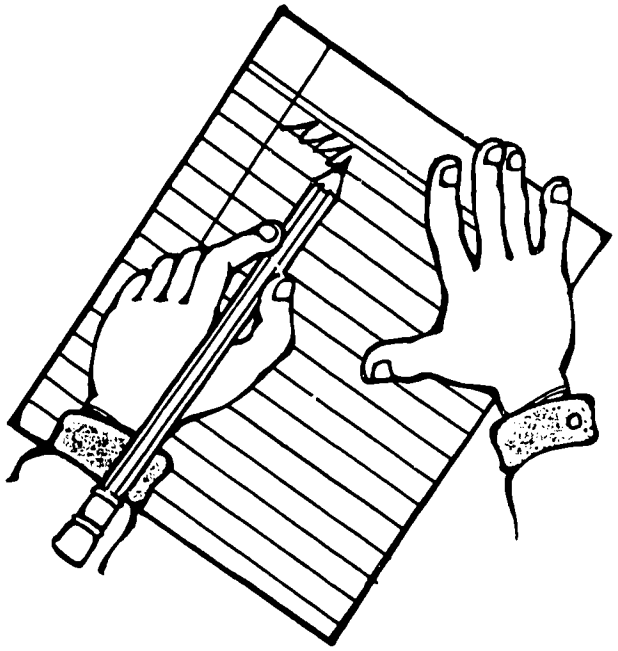
That is not to say that there are not considerable differences between the styles taught by published materials, but it is not apparent that any single, foolproof method exists which consistently produces top-quality results (Currie, 1981), and the quality of the writing produced by

children regardless of the system used remains pretty much the same. (Peck, Askov, and Fairchild, 1980)

There are three major systems for teaching handwriting. Although there are more than three publishers, each of the published materials can fit into one of these categories:

1. Ball and stick manuscript (called circle and line by some publishers) followed by cursive.
2. Continuous stroke manuscript followed by cursive.
3. Italic (unconnected) followed by cursive (or connected) italic.

The grade level at which cursive is introduced varies somewhat, but is available in most programs for either grade two or three, with grade three being by far the most popular throughout the United States. (Peck, Askov, and Fairchild, 1980) Some of the controversy in handwriting is over the age at which children should be introduced to cursive, but the major debate is over how the transition from manuscript to cursive is made. Even though there are claims by the publishers that one system makes this transition for children much easier than other methods, the research has so far failed to support the claims. (Currie, 1981)



Instructional Strategies

The research in handwriting supports much of the research about effective teaching: use direct instruction, provide guided practice, identify the objective of the activity, and reduce the learning to manageable steps through task analysis. However, the research has failed to produce a list

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of practices which, if followed, will produce success with all children. There are some specific strategies which seem to be well supported by research for increasing success for most students.

- Teacher attitude toward the importance of good handwriting has a strong effect on students. (Peck, Askov, and Fairchild, 1980)
- Teacher inservice training was shown in one study to have a significant effect on student manuscript writing, though not as much improvement was shown in cursive writing. (Peck, Askov, and Fairchild, 1980)
- Students receiving combined verbal and demonstration instruction have increased success. Labeling the distinctive characteristics of various letters brought about further improvement. (Peck, Askov, and Fairchild, 1980)

The publishers often base this supposed ease on the number of new strokes children need to learn to connect the letters. When analyzed, this number of new strokes seems more to depend on how it is counted than on what movements the hand actually has to make.

- Time for handwriting instruction should be preserved in short, daily learning periods, and the instruction should be direct, not incidental. (Graham and Miller, 1980)

- Skills should be over-learned in isolation as well as practiced in meaningful contexts of composing activities. (Graham and Miller, 1980)

- Teachers should be able to demonstrate a "model" handwritten form. Children should be surrounded with examples of good handwriting posted around the room. (Milone and Wasylyk, 1981)

- Students should be taught how and encouraged to evaluate their own handwriting. (Milone and Wasylyk, 1981)

- Responses to children's early efforts at handwriting should not focus strongly on errors. Children's sense of failure is reinforced by adult reaction to perceived errors. (Graves and Stuart, 1985)

Remediation

Despite efforts to improve handwriting instruction, there is a need for a systematic plan to remediate errors. The need for remediation exists at all post-kindergarten grade levels and is best served by a process of diagnosing problems and prescribing instruction for change. Students do not seem to be capable of simply improving their handwriting; they need help in identifying what needs to be changed and in changing the process of forming the letters themselves. (Sassoon, 1983)

Left-Handed Writers

Special provisions need to be made in handwriting instruction for the left-handed writer. Approximately one in ten children is left-handed, with boys slightly in the majority. (Graham and Miller, 1980) Some research studies support the common belief that left-handed writers produce less legible writing although conflicting studies report no real difference and point to instructional procedures as accounting for differences in legibility.

Left-handed students need opportunities to observe other left-handed writers. If the teacher is not able to model left-handed techniques, a parent, aide, or another teacher should be invited in to do so. Additionally, by grouping left-handed students together for handwriting instruction, they may be able to help each other with paper position and letter formation. (Graham and Miller, 1980)

Research indicates that a few difficult to form letters are the basis for most illegibilities. For example, the letters *a, e, r,* and *t* account for approximately 50 percent of the malformed letters at any grade level. (Graham and Miller, 1980) Children at lower grade levels seem to have more difficulty with lowercase letters than with uppercase letters. Practice on those few letters may result in increased legibility. (Peck, Askov, and Fairchild, 1980)

Letter reversals also seem to account for a large percentage of errors among young writers. While quite a few reversal errors disappear without direct intervention, some instruction may assist in correcting errors. Strategies include having students simultaneously trace and name the letter, using color cues or lines to indicate directionality, and associating the problem letter with another letter not commonly reversed. (Graham and Miller, 1980) In any case, there is a need to incorporate perceptual skill development

to correct reversals by addressing the left-to-right orientation error. (Peck, Askov, and Fairchild, 1980)

Because children often have a difficult time seeing exactly what the teacher is doing to form a letter correctly, especially at the blackboard or overhead projector, it is important to provide as many clues as possible using every medium. This help can take the form of arrows showing the direction of the letter formation, marks to indicate where to stop or start, and verbal instruction to augment the demonstration. (Peck, Askov, and Fairchild, 1980)

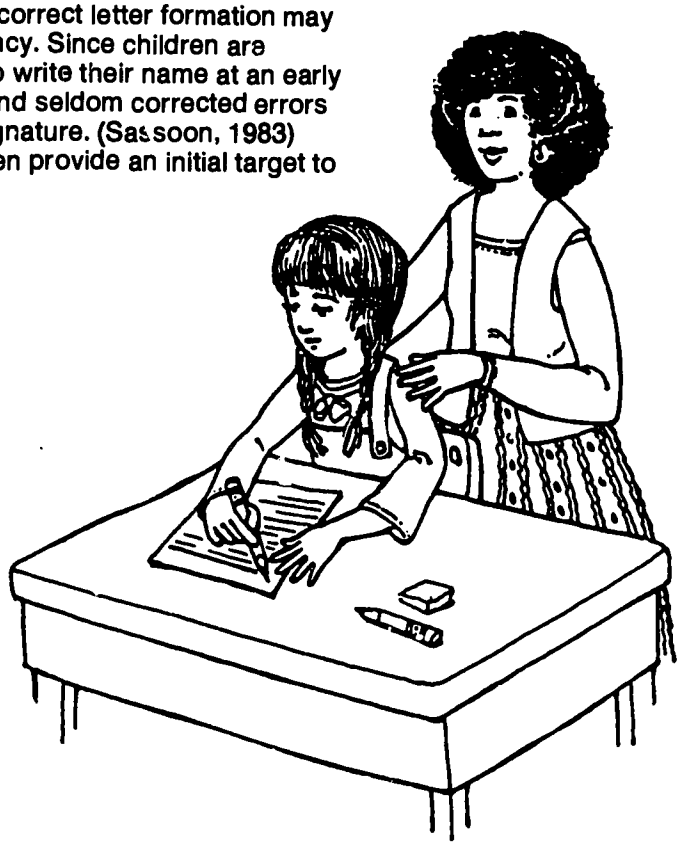
Another important aspect of the teaching process is to see to it that the child is actually following the directions which have been given. Children can invent methods for creating letters which look correct but which may have been created upside down or backward or both. Teachers must set up some kind of monitoring system which allows them to actually watch each child in the act of forming the letters. Incorrect letter formation may decrease writing fluency. Since children are usually encouraged to write their name at an early age, often repeated and seldom corrected errors are common in the signature. (Sassoon, 1983) The signature may then provide an initial target to diagnose problems.

Specific positive feedback to students is extremely important in remediating handwriting errors. (Peck, Askov, and Fairchild, 1980) Other studies show that statements which give students a clear idea of changes which need to be made are more helpful than general directions to "write better." (Milone and Wasylyk, 1981)

Additional studies have shown that students trained in self-instruction techniques involving simultaneously verbalizing and copying a letter show significant improvement in letters needing remediation. (Peck, Askov, and Fairchild, 1980)

Applications of Technology

Although there is no reason to believe that technology will reduce the need to learn handwriting for personal reasons, there is reason to believe technology may be able to help guide the practice of children as they write. Technology



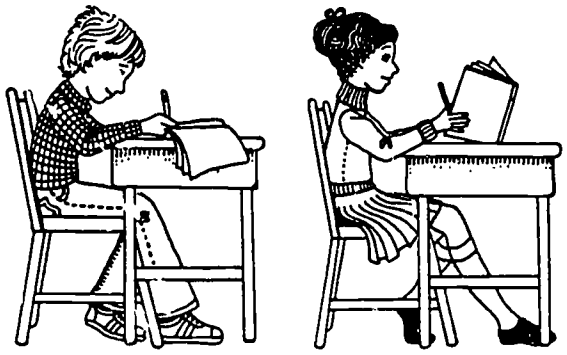
may also help provide children with the right kind of practice at the right time. A new technique which uses a wand attached to a computer may help teachers see where and how children are using inappropriate movements and that instant diagnosis may indeed help students develop better habits from the beginning. The peripherals and the software are not yet perfected, but this new technology may be very helpful in the future.

One other area of new technology that may help teach penmanship is the use of the video tape recorder. By having videotapes of the handwriting act modeled correctly for both the right-handed and the left-handed student, the process may be clearer to the students. The close-up view provided by the video camera is far superior to the view normally provided to the child in the classroom. Children learn better from an active model — that is, they learn faster when they can see the modeling of the process than they do if they merely see still pictures of the process. (Furner, 1985) In addition, children learn handwriting skills better when they are demonstrated on TV than they do when modeled by the teacher. (Peck, Askov, and Fairchild, 1980) This may be due to the camera's ability to focus on the hand movements and to eliminate distractors from the screen.

CONCLUSION

There are some important conclusions which can be reached in reading the research about handwriting. One conclusion is that handwriting can be improved. It is neither expensive nor exceedingly time-consuming to do so. Before any district effort is undertaken, teachers need additional training. Not only do they need to be familiar with the research, they need to be trained in both the techniques of teaching letter formations and in prescribing remediation when appropriate.

There are simple things the schools can do to help improve the teaching of handwriting in spite of budget constraints. One is to set up clinics to train teachers. This kind of inservice can often be completed within the building. If materials are in the process of being adopted, a condition of the purchase should be free training from the publisher for all staff. Another strategy is to instruct parents in how to help their children in beginning to learn to write. In addition to specific information on how to deal with the physical aspects of the writing act, there are all kinds of drawing activities which will foster the child's ability to make the beginning strokes so necessary in learning handwriting. Finally, materials should be adopted which are consistent within a school system, and if the decision is made to change the methodology, an orderly phase in of the system should be planned. (Sassoon, 1986)



Effective programs provide opportunities for students to verbalize rules of letter formation and to evaluate their own success. (Koenke, 1986) In addition, students need frequent opportunities to apply handwriting skills in composing situations with reminders about the differences in fluency and neatness for rough drafts and final copies. Finally, teacher attitude has a significant impact in developing a positive disposition toward legible, fluent handwriting.

Research in the area of handwriting is continuing, and more experimental studies are looking for answers to specific problems. (Peck, Askov, and Fairchild, 1980) As more information becomes available and as technological advances continue, the ability of the school system to address effectively the issues in handwriting instruction will increase.

Brotherson, Patricia P. and Charles R. Duvall. "An Annotated Bibliography of Literature Dealing with Handwriting Instruction and Education." ERIC Document Reproduction Service No. ED 186 923, April 1980.

This 75-entry bibliography is well done and very useful for serious researchers of handwriting. The original, which ERIC is using to copy from, is of poor quality, so reading it is challenging but not impossible. It would be more useful if it were updated.

Brown, Gerald R. "Handwriting: A State of the Art Research Paper." ERIC Document Reproduction Service No. ED 147 826, September 1970.

This review of the literature about handwriting is useful and comprehensive. The specificity of the information makes it particularly helpful to classroom teachers.

Brugelmann, Hans J. "Discovering Print: A Process Approach to Initial Reading and Writing in West Germany," *The Reading Teacher*. 40.3 (Dec. 1986): 294-98.

This article focuses on how children learn to read and write. Although most of the information on handwriting is incidental, the learning theory has wide application.

Currie, A. Blaine. "Instruction in Handwriting in Ontario Schools." *Review and Evaluation Bulletin*. 2.2 (1981): 1-42.

This is an excellent booklet. It is written in the format of asking and answering 35 pertinent questions about handwriting instruction.

Furner, Beatrice A. "Handwriting Instruction for a High-Tech Society: Will Handwriting Be Necessary?" ERIC Document Reproduction Service No. ED 257 119, March 1985.

This paper, which was presented at the Annual Meeting of the National Council of Teachers of English Spring Conference, March 1985, is particularly interesting to those who are concerned about the use of Computer Assisted Instruction (CAI). Several suggestions for future research in this area are given.

Graham, Steve and Lamoine Miller. "Handwriting Research and Practice: A Unified Approach," *Focus on Exceptional Children*. 13 (Oct. 1980): 1-15.

This is an excellent article for a comprehensive treatment of research on handwriting. Even though the intended audience is the teachers of "exceptional" children, the information in this article can readily be applied to all handwriting instruction. It includes a concise summary of research on both manuscript and cursive writing.

Graves, Donald H. *Writing: Teachers & Children at Work*. Portsmouth, NH: Heinemann Educational Books, 1983.

This book chronicles the National Institute of Education project in which Graves was involved from 1978-80. He worked with teachers in a public elementary school in the process of discovering how to teach composition to young children. The wisdom gained by both Graves and the teachers in this project has been translated into a model which classroom teachers can begin to apply in daily writing activities for their children.

Graves, Donald H. and Virginia Stuart. *Write from the Start: Tapping Your Child's Natural Writing Ability*. New York: New American Library, 1985.

This book is more of a "how to" approach than the Graves book cited above. Virginia Stuart provides the running narrative with advice (and wisdom) interjected by Donald Graves. The intended audience for this book is parents as well as teachers.

Howell, Helen. "Write on, You Sinistrals!" *Language Arts*. 55.7 (Oct. 1978): 852-56.

This is an excellent article about the special needs of left-handed children in handwriting instruction.

Klein, Marvin L. *The Development of Writing in Children: Pre-K through Grade 8*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1985.

This is a review of research on children and the writing process with an emphasis on program evaluation.

Koenke, Karl. "Handwriting Instruction: What Do We Know?" *The Reading Teacher*. 40.2 (Nov. 1986): 214-16.

This is a fine concise report prepared by ERIC for *The Reading Teacher*.

Milone, Michael N. Jr, and Thomas M. Wasylyk. "Handwriting in Special Education," *Teaching Exception Children*. 14.2 (Nov. 1981): 58-61.

Although this article is directed toward the teacher of exceptional children, much of the information is applicable to all students. The article is clear, direct, and well organized.

Peck, Michaeleen, Eunice N. Askov, and Steven H. Fairchild. "Another Decade of Research in Handwriting: Progress and Prospect in the 1970s," *The Journal of Education Research*. 73 (1980): 283-98.

This is a survey of the historic and current research from 1970-80. It is interesting to note that many of the same problems existed in 1980 as in 1970, which was the subject of Askov's earlier research.

Phelps, JoAnne and others. "The Children's Handwriting Scale: A New Diagnostic Tool," *The Journal of Educational Research*. 79 (1985): 46-50.

The thrust of this evaluation of children's writing is to help identify learning disabled children. However, the scale appears very useful for all children.

Sassoon, Rosemary. *The Practical Guide to Children's Writing*. London: Thames and Hudson Ltd, 1983.

This is an excellent resource for a discussion of teaching handwriting skills to children. The author is a master calligrapher in her own right and brings to this book years of experience with teaching children to write.

Sloan, Charles A. "Parents' and Teachers': Perceptions of Handwriting." ERIC Document Reproduction Service No. ED 155 723, May 1977.

This interesting study of the attitudes of parents and teachers toward handwriting is an update of a 1966 study. It is interesting to read and reveals much about the current state of the art.

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The review of research and initial draft of this paper was done by D. Gay Masters, language arts coordinator, Salem-Keizer School District. The paper was revised to reflect comments from Oregon educators and published by the Department of Education.

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